

AMENDMENTS TO THE CLAIMS

Claims 1-20 (Cancelled).

21. (New) A sensor unit for picking up mechanical vibrations, sounds, and ultrasound from a surface of a body, comprising:

a piezoelectric foil strip defining a sensor element, said piezoelectric strip having signal wires attached thereto for transmitting electrical signals representing the vibrations, sounds, or ultrasound to be picked up;

flat support parts for holding only opposite ends of said piezoelectric strip; and

an engagement strip for engaging the surface of the body to receive vibrations therefrom, and for propagating the vibrations to said piezoelectric strip, said engagement strip being held in said support parts so as to extend in a curved manner along said piezoelectric strip and define a space between said piezoelectric strip and said engagement strip.

22. (New) The sensor unit of claim 21, wherein said support parts are separate support pieces having holding pockets receiving one of said opposite ends of said piezoelectric strip.

23. (New) The sensor unit of claim 22, wherein said engagement strip is stiff and curved so as to tension said piezoelectric strip.

24. (New) A vibration detector array comprising:

a plurality of sensor units arranged in a substantially planar A by B matrix with A units arranged along a first direction, and B units in a second direction perpendicular with respect to the first direction and within the same plane, each of said sensor units comprising a sensor unit as recited in claim 22;

separate signal wires leading out from each of said plurality of separate sensor units; and
a frame to which each of said plurality of sensor units is attached.

25. (New) The vibration detector array of claim 24, wherein said frame has B parallel openings in which a first end of each of A sensor units is mounted by a common support piece corresponding to one of said support parts, said common support piece defining a boundary edge for each of said B parallel openings, a second end of each of said A sensor units hanging freely.
26. (New) A method of using a vibration detector, comprising:
incorporating said vibration detector array as recited in claim 24 into a garment; and
having a person wear the garment for carrying out a surveying auscultation examination of the person.
27. (New) A method of using a vibration detector, comprising:
incorporating said vibration detector array as recited in claim 24 into a belt having an attachment device; and
attaching the belt to an object for industrial vibration pickup analysis of the object.
28. (New) The sensor unit of claim 21, wherein said engagement strip constitutes a first engagement strip, further comprising a second engagement strip, said first engagement strip and said second engagement strip being located on opposite sides of said piezoelectric strip.
29. (New) The sensor unit of claim 28, wherein each of said first engagement strip and said second engagement strip is stiff and curved so as to tension said piezoelectric strip.
30. (New) A vibration detector array comprising:
a plurality of sensor units arranged in a substantially planar A by B matrix with A units arranged along a first direction, and B units in a second direction perpendicular with respect to the first direction and within the same plane, each of said sensor units comprising a sensor unit as recited in claim 28;
separate signal wires leading out from each of said plurality of separate sensor units; and
a frame to which each of said plurality of sensor units is attached.

31. (New) The sensor unit of claim 21, wherein said engagement strip is stiff and curved so as to tension said piezoelectric strip.

32. (New) The sensor unit of claim 31, wherein said engagement strip is loosely attached to one of said support parts by being inserted into a pocket of said one of said support parts.

33. (New) The sensor unit of claim 21, wherein the space between said piezoelectric strip and said engagement strip is filled with a substance operable to transfer pressure, said piezoelectric strip and said engagement strip having central areas substantially symmetrically outwardly curved so as to maintain said substance in place.

34. (New) The sensor unit of claim 21, wherein said support parts comprise welding rims, said engagement strip comprises a first semi-ovoid foil piece, further comprising a second semi-ovoid foil piece, said first semi-ovoid foil piece and said second semi-ovoid foil piece having opposite ends held by said welding rims so as to define a bubble shape.

35. (New) A vibration detector array comprising:

a plurality of sensor units arranged in a substantially planar configuration, each respective sensor unit having separate signal wires leading out therefrom, each of said sensor units comprising a sensor unit as recited in claim 34, said sensor units being arranged in close juxtaposition so that adjacent sensor units share a common welding rim.

36. (New) The sensor unit of claim 34, wherein said piezoelectric strip is stretched in a space defined between said first semi-ovoid foil piece and said second semi-ovoid foil piece, and is located midway between said first semi-ovoid foil piece and said second semi-ovoid foil piece.

37. (New) The sensor unit of claim 36, wherein at least one of a space defined between said first semi-ovoid foil piece and said piezoelectric strip and a space defined between said second semi-ovoid foil piece and said piezoelectric strip is filled with a substance operable to transfer pressure.

38. (New) The sensor unit of claim 37, wherein said substance has a hardness value of the same magnitude as body tissue in an area in and under skin of a topical listening area of a human body or animal body.

39. (New) The sensor unit of claim 21, wherein only opposite ends of both said piezoelectric strip and said engagement strip are fixed to said support parts such that each opposite elongated side of said sensor unit is open, further comprising a viscous silicone substance between said piezoelectric strip and said engagement strip.

40. (New) A vibration detection device comprising:

- a garment to be worn by a person; and

- a vibration detection array incorporated into said garment, said array including:

- a plurality of separate sensor units arranged in a substantially planar manner, each of said sensor units comprising a sensor unit as recited in claim 21;

- separate signal wires leading out from each of said plurality of separate sensor units; and

- a frame to which each of said plurality of sensor units is attached.